NRCS

United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report March 1, 2003

Solder Ranger Station SNOTEL Site in Camas Creek Basin

Basin Outlook Reports
and
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Cooperative Snow Surveys

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Water supply forecasts are produced in cooperation and coordination with the National Weather Service, NOAA

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

March 1, 2003

SUMMARY

February precipitation was below normal across the state with the highest amounts in the Bear River at 97% of average and the lowest in west central, central, and southern Idaho at 50-60% of average. Snowpacks range from half of average in the headwaters of the Spokane basin and across most of southern Idaho to 89% in the Salmon basin. As a result of below normal February precipitation and with the bigger snowfall months now behind us, streamflow forecasts decreased 5-15 percentage points from last month in the Boise, central mountains and basins south of the Snake River. The lowest streamflow forecasts are in the drainages from the Owyhee basin to the Bear River at 30-35% of average. The low elevation streams of Camas Creek, Willow, Blackfoot and Portnuef, along with the Spokane River and its tributaries, are forecast at 50-60% of average. Elsewhere, streams are forecast in the 65-85% of average range with the Salmon River forecast the highest at 87%. Irrigation water shortages are expected across central and southern Idaho. The Boise and upper Snake water supplies will be tight while Payette users should have adequate supplies. How severe the water shortages are depends on spring and summer precipitation and temperatures.

SNOWPACK

The highest snowpacks are in the Salmon River basin at 89% of average. The lowest are half of average in the St. Joe and Coeur d'Alene and across most of southern Idaho. Low and mid-elevation snowpacks continue to be almost non-existent across the state. However, last month's rain and early melt got moisture back in the soils, streams and some reservoirs along the western edge of Idaho.

PRECIPITATION

Below average precipitation fell across the state in February. The least amounts were 53% for the basins south of the Snake River. The west central, central and Panhandle Region were not far behind at 58% of average. February precipitation was 80% of average in the upper Snake and Salmon basins and 90% in the Clearwater basin. The highest percentages were in the Bear River basin at 97% of average. The basins south of the Snake River host the lowest water year to date precipitation in the state at 64% of average. The highest water year to date precipitation is in the Salmon and west central mountains at 85% of average. Current water year to date precipitation is less than last year at this time with the Panhandle Region and basins south of the Snake River at only two-thirds of last year's totals.

RESERVOIRS

The Good News: Late January and early February rain along with low to mid-elevation snowmelt added much needed moisture into the hydrologic picture -- soils, streams and reservoirs in western central and northern Idaho. Most storage facilities in the Panhandle Region are near average or better. Dworshak Reservoir increased from 68% of capacity a month ago to 77% of capacity, 119% of average and should fill this year even with below average inflow. The Payette reservoir system is 61% of capacity, which is average for February 28.

The Bad News: reservoirs in central, southern and eastern Idaho remain low with Magic and Salmon Falls reservoirs nearly empty at about 10% of capacity, 26% of average. Little Wood and Mackay reservoir are both 41% of capacity, and about 65% of average. Combined reservoir storage in Palisades Reservoir and Jackson Lake is 37% of capacity, 54% of average. Blackfoot Reservoir is only 19% of capacity, which is less than 2/3s of last year. The combined reservoir storage for the 8 major reservoirs in the upper Snake is 48% of capacity, 68% of average. Bear Lake is 26% of capacity, 41% of average; 5th lowest February 28 storage level since 1922. Oakley Reservoir is 20% full, about the same as last year. Even with the rain and loss of low and mid-elevation snow, Owyhee Reservoir only increased from 20% full a month ago to 25% full; 36% of average. The Boise reservoir system is 43% full, about the same as a year ago, but the entire system probably won't fill.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

Streamflow forecasts decreased 5-15 percentage points from a month ago in the west-central, central, and basins south of the Snake River. The lowest forecasts are across southern Idaho from the Owyhee to the Bear River basin at 30%-35% of average. Streams forecasted in the 50-60% of average are Camas Creek, Blackfoot, Coeur d'Alene, St. Joe, Spokane and American Falls Inflow. Elsewhere, streams are forecast in the 65-85% of average range with the Salmon River forecast the highest in the state at 87%.

Water users should evaluate their risk level based on all five exceedance streamflow forecasts and consider using a lesser Exceedance Forecast, especially if future precipitation is below normal. The streamflow forecast equations do not use future precipitation, but assume normal spring and summer precipitation through the runoff season. In addition, snowpack is not as efficient in producing streamflow following dry years. Normal or above precipitation during the snowmelt season will help improve the efficiency of the snowpack in producing runoff. Based on the Surface Water Supply Index (SWSI), agricultural irrigation water shortages are likely across central, and southern Idaho. Magnitude of shortages depends on your water right and water source(s). Water users should stay in contact with their irrigation districts for more specific information.

RECREATION

Below average snowpacks and streamflow forecasts often result in lower snowmelt streamflow peaks and a shorter high water season of dangerous flows, allowing river runners to put on the river earlier and actually extend the floating season. The river running season looks to be similar to last year on the Main and Middle Fork Salmon rivers with Deadwood Summit and Banner Summit SNOTEL sites almost identical to last year at just below average. The Selway and Lochsa rivers should have good runoff volumes with a shorter high water season. The Payette River will have a good boating season as it always does without the danger high snowmelt flows. Much more rain and snow is needed in the Owyhee basin to bring the flows back up. Rain will cause flashier short-lived rises but won't last long without much snow to sustain the peaks. The Burneau River basin snow is 59% of average, just more than last year, but will also have a short floating season.

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of March 1, 2003

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

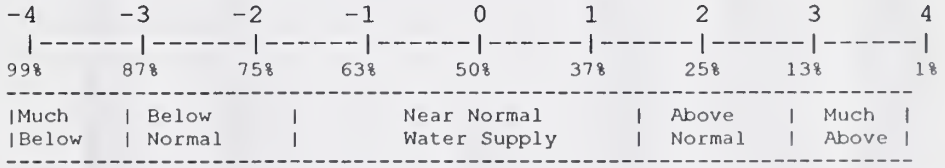
SWSI values are published January through May and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

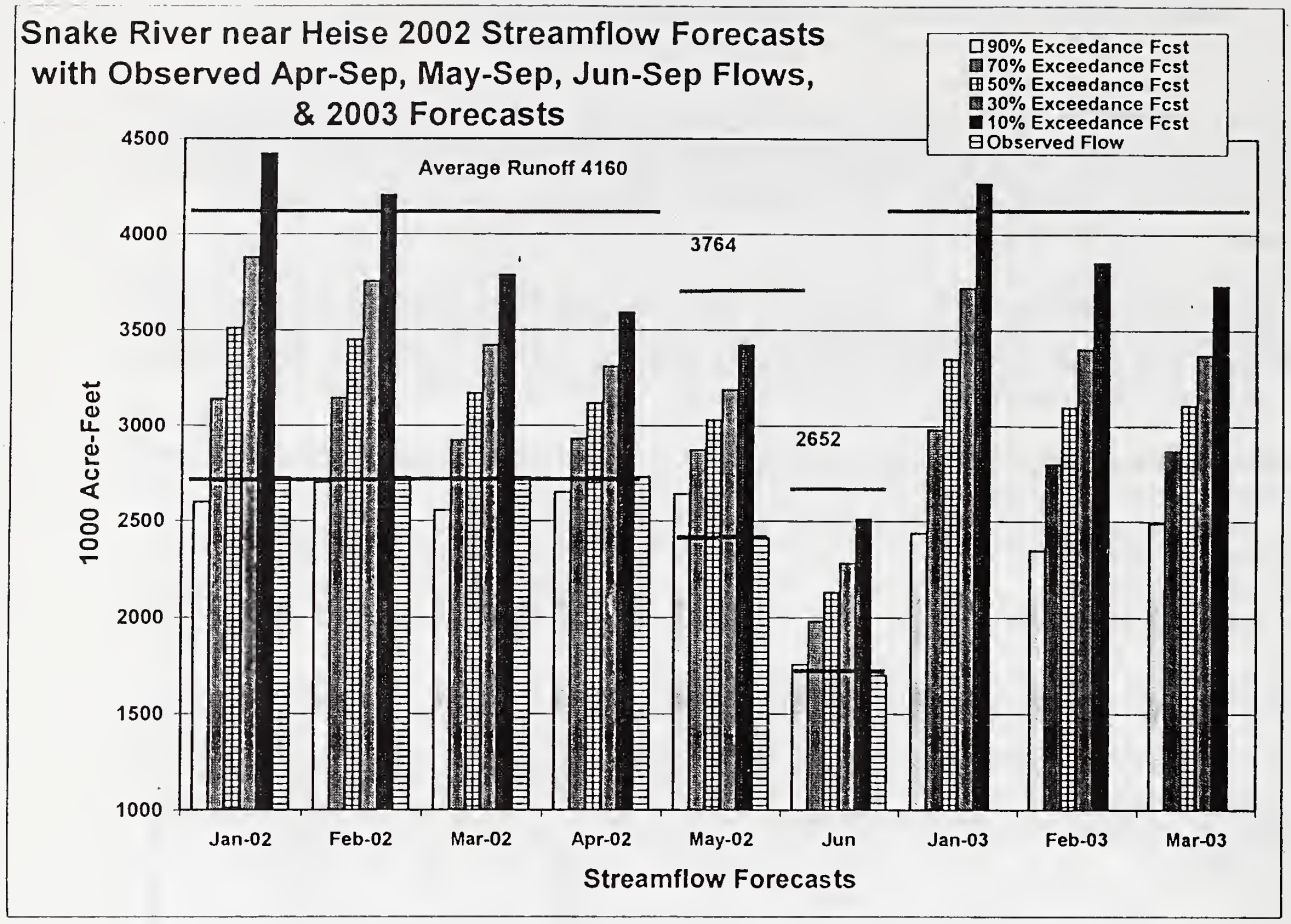
US National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Dept. of Water Resources
PacifiCorp

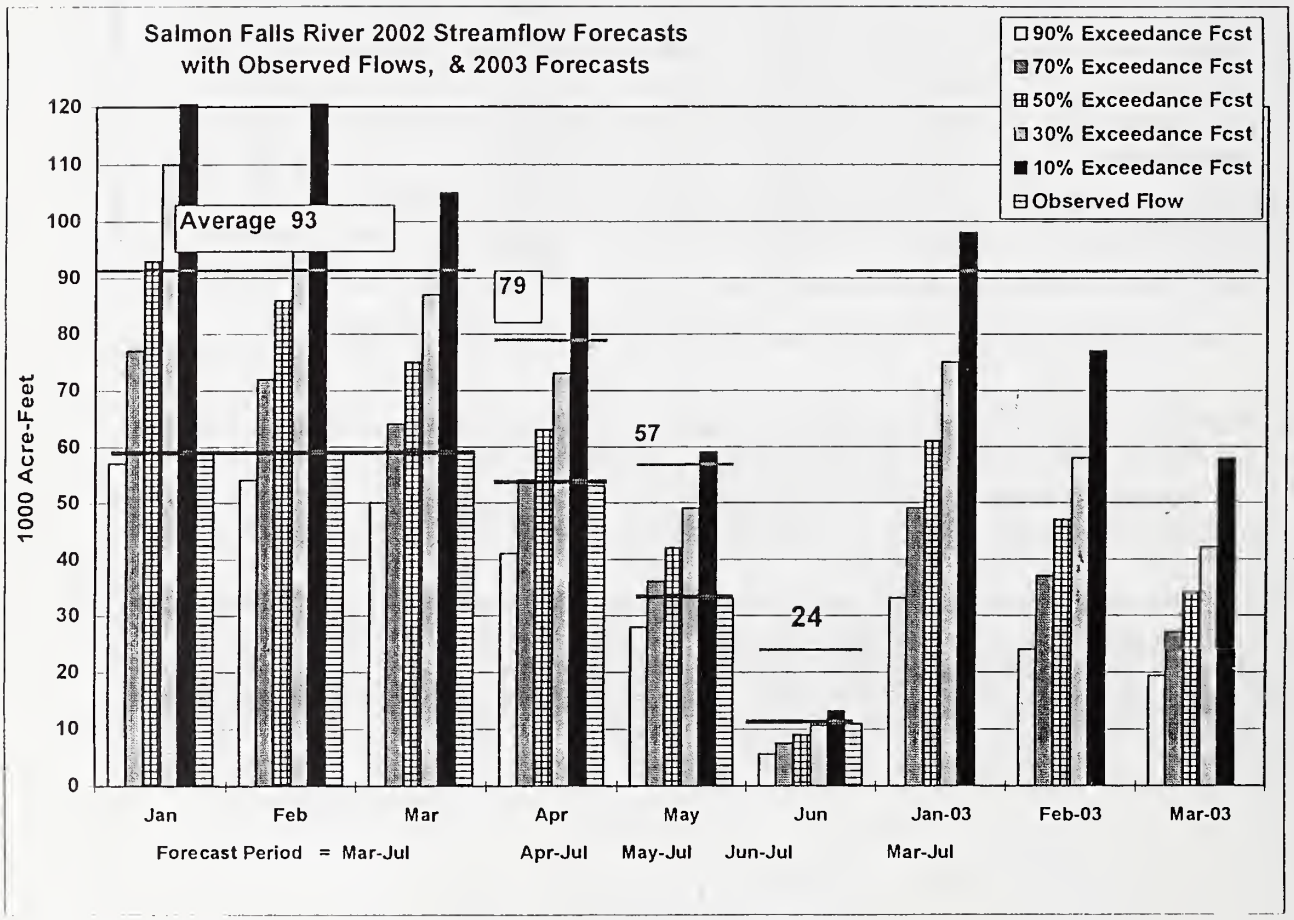
BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	-3.2	1987/94	NA
CLEARWATER	-2.2	1988	NA
SALMON	-0.7	2002	NA
WEISER	-1.6	2000	NA
PAYETTE	-1.6	1989	NA
BOISE	-2.1	1994	-2.6
BIG WOOD	-2.2	1989	-1.4
LITTLE WOOD	-1.2	1989	-2.6
BIG LOST	-1.8	1987	-0.8
LITTLE LOST	-2.5	2000	0.0
HENRYS FORK	-2.0	1990/91	-3.3
SNAKE (HEISE)	-2.9	1987/88	-2.3
OAKLEY	-2.8	1988	0.0
SALMON FALLS	-3.4	2001	0.0
BRUNEAU	-2.3	2002	NA
BEAR RIVER	-3.9	2002	-3.8

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

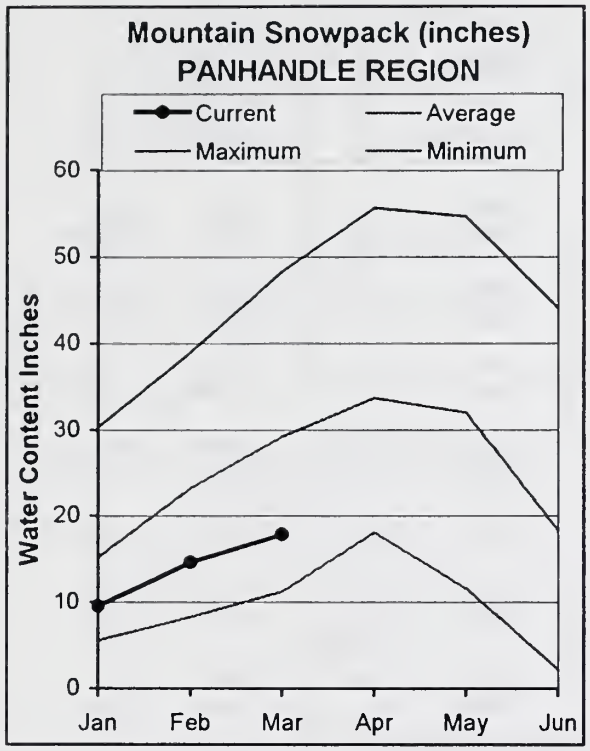


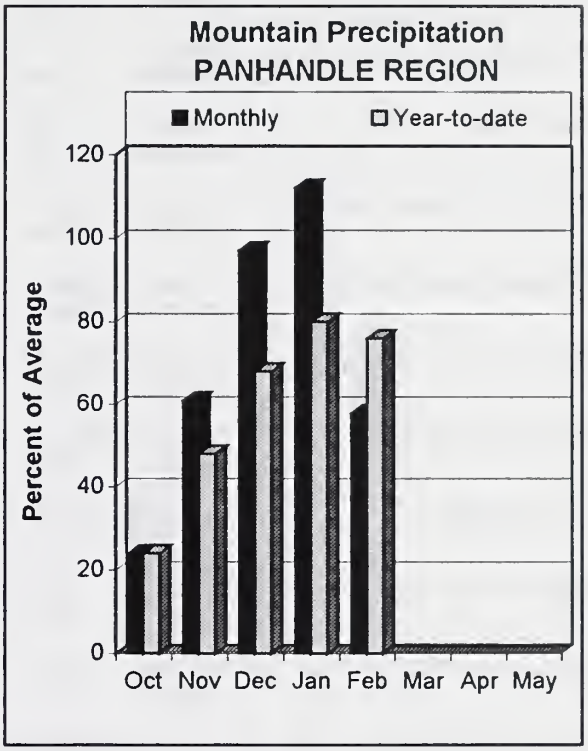
Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.


Snake River near Heise 2002 Streamflow Forecasts
with Observed Apr-Sep, May-Sep, Jun-Sep Flows,
& 2003 Forecasts
90% Exceedance Fcst
70% Exceedance Fcst
50% Exceedance Fcst
30% Exceedance Fcst
10% Exceedance Fcst
Observed Flow
Average Runoff 4160
3764
2652
1000 Acre-Feet
4500
4000
3500
3000
2500
2000
1500
1000
Jan-02
Feb-02
Mar-02
Apr-02
May-02
Jun
Jan-03
Feb-03
Mar-03
Streamflow Forecasts


Salmon Falls River 2002 Streamflow Forecasts
with Observed Flows, & 2003 Forecasts
90% Exceedance Fcst
70% Exceedance Fcst
50% Exceedance Fcst
30% Exceedance Fcst
10% Exceedance Fcst
Observed Flow
Average 93
79
57
24
1000 Acre-Feet
120
110
100
90
80
70
60
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jan-03
Feb-03
Mar-03
Forecast Period = Mar-Jul
Apr-Jul
May-Jul
Jun-Jul
Mar-Jul

PANHANDLE REGION
MARCH 1, 2003





WATER SUPPLY OUTLOOK

After above average precipitation in January, February brought precipitation at 58% of average. As a result, water year to date decreased to 76% of average, which is still much better than the 47% of average received by March 1 in 2001, but only 2/3s of last year's. Some of the lowest snowpacks in the state are in the Coeur d'Alene, St. Joe, Spokane and Hayden Lake basins at about half of average. The low elevation snowpack remains nearly non-existent with Sherwin SNOTEL site, at 3200 feet, in the headwaters of the St. Maries/Potlatch rivers the 2nd lowest since 1960 at 37% of average, 4.0 inches of snow water. 1981 had the least snow at 3.2 inches. Overall, the Panhandle Region snowpack is 61% of average. This is the 3rd lowest snowpack since 1969 and similar to the amount of snow measured in 1984 and 1988. Only 1977 and 2001 had less snow than this year. The Pend Oreille River basin snowpack is 75% of average, about 3/4s of last year. Streamflows were near normal last month. Storage in the reservoirs and lakes got a boost last month with winter rains in January. Current storage is above average for water storage facilities in Idaho and Montana, except in Coeur D'Alene Lake. The St. Joe River is forecast at 62% of average, 700,000 acre-feet for the April-July period. In 2001, the St. Joe River streamflow yielded 604,200 acre-feet, 53% of average. Other Panhandle streams are forecast at 60-75% of average, while the larger Pend Oreille and Kootenai rivers are forecast at about 70%. Spring and summer streamflows volumes will be below normal; water users should plan accordingly.

PANHANDLE REGION

Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	3940	4670	5000	71	5330	6060	7035
	APR-SEP	5740	5760	5770	71	5780	5800	8125
MOYIE RIVER at Eastport	APR-JUL	275	305	325	81	345	375	403
	APR-SEP	275	310	330	79	350	385	418
SMITH CREEK	APR-JUL	66	80	90	73	100	114	123
	APR-SEP	65	81	92	71	103	119	129
BOUNDARY CREEK	APR-JUL	70	84	94	76	104	118	123
	APR-SEP	73	88	98	76	108	123	129
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	4870	6840	7730	69	8620	10590	11280
	APR-SEP	5350	7520	8500	68	9480	11650	12460
PEND OREILLE Lake Inflow (2)	APR-JUL	6290	7700	8660	68	9620	11030	12700
	APR-SEP	6860	8410	9460	68	10510	12060	13900
PRIEST near Priest River (1,2)	APR-JUL	470	565	610	75	655	750	814
	APR-SEP	420	580	650	75	720	880	868
COEUR D'ALENE at Enaville	APR-JUL	275	380	450	61	520	625	739
	APR-SEP	295	400	475	61	550	655	778
ST. JOE at Calder	APR-JUL	490	615	700	62	785	910	1136
	APR-SEP	520	650	735	61	820	950	1205
SPOKANE near Post Falls (2)	APR-JUL	910	1240	1470	58	1700	2030	2552
	APR-SEP	950	1300	1530	58	1760	2110	2650
SPOKANE at Long Lake (2)	APR-JUL	1060	1450	1710	60	1970	2360	2851
	APR-SEP	1190	1600	1880	61	2160	2570	3072

PANHANDLE REGION

Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2362.0	2421.0	2047.6
FLATHEAD LAKE	1791.0	1145.0	937.5	802.7
NOXON RAPIDS	335.0	307.0	319.9	297.5
PEND OREILLE	1561.3	907.5	593.6	778.8
COEUR D'ALENE	238.5	101.7	133.7	144.9
PRIEST LAKE	119.3	62.0	58.9	56.8

PANHANDLE REGION

Watershed Snowpack Analysis - March 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	31	67	67
Moyie River	11	79	76
Priest River	4	78	85
Pend Oreille River	95	78	73
Rathdrum Creek	5	43	59
Hayden Lake	2	25	41
Coeur d'Alene River	9	46	54
St. Joe River	4	49	58
Spokane River	18	43	54
Palouse River	2	23	37

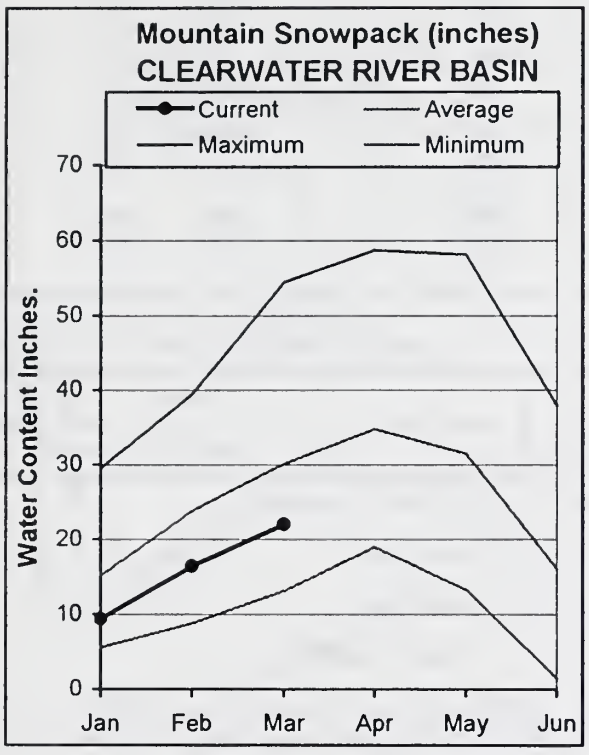
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

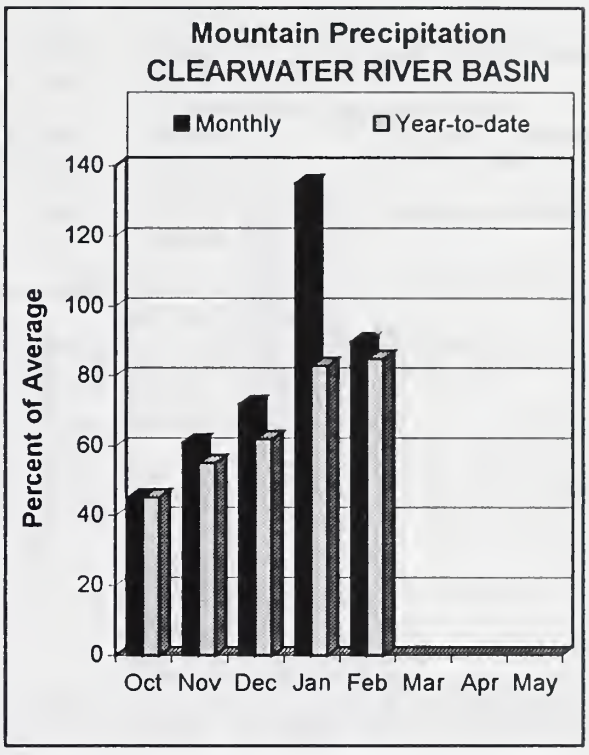
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN
MARCH 1, 2003





WATER SUPPLY OUTLOOK

February precipitation was back to below average at 90% of average after January brought precipitation that was 135% of average. Precipitation for the water year is 85% of average. Rain and warm temperatures in late January and early February brought rapid rises in the streams that were low since last summer, but cool temperatures in later February stabilized the remaining snow from melting and returned stream levels to below average by month's end. Snowpack percentages remain low in the North Fork Clearwater River basin at 70% of average, 7th lowest since 1961 and similar to years 1987 and 1988. The Lochsa and Selway basins snowpack are better at 83% and 88% of average respectively. Dworshak Reservoir is 77% of capacity, 119% of average. Water users and managers can expect below average spring and summer runoff volumes. Streamflow forecasts call for 82% of average for the Selway River, 80% for the Lochsa River, and 71% for Dworshak Reservoir inflow. The below average snow and streamflow forecasts allow for greater reservoir storage but also decreases the likelihood of an extended period of high dangerous flows during the snowmelt season, allowing river runners to put on the river earlier in the spring. Low flows in the headwater streams will also occur earlier in the summer due to the low snow. The Clearwater River at Spalding is forecast at 71% of average.

CLEARWATER RIVER BASIN
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SELWAY near Lowell	APR-JUL	1390	1560	1680	82	1800	1970	2062
	APR-SEP	1470	1660	1780	82	1900	2090	2170
LOCHSA near Lowell	APR-JUL	1040	1150	1230	80	1310	1420	1530
	APR-SEP	1100	1220	1300	81	1380	1500	1609
DWORSHAK RESV INFLOW (1,2)	APR-JUL	930	1570	1860	71	2150	2790	2635
	APR-SEP	1010	1650	1940	69	2230	2870	2799
CLEARWATER at Orofino (1)	APR-JUL	2100	3170	3660	79	4150	5220	4645
	APR-SEP	2310	3380	3870	79	4360	5430	4900
CLEARWATER at Spalding (1,2)	APR-JUL	2890	4540	5290	71	6040	7690	7435
	APR-SEP	3210	4860	5610	72	6360	8010	7850

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2680.0	2156.3	2247.3

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - March 1, 2003

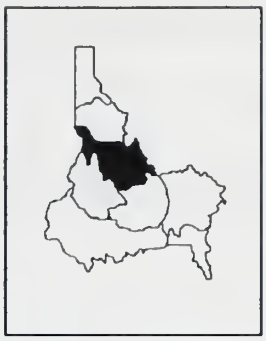
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	65	70
Lochsa River	3	92	83
Selway River	5	98	88
Clearwater Basin Total	18	71	74

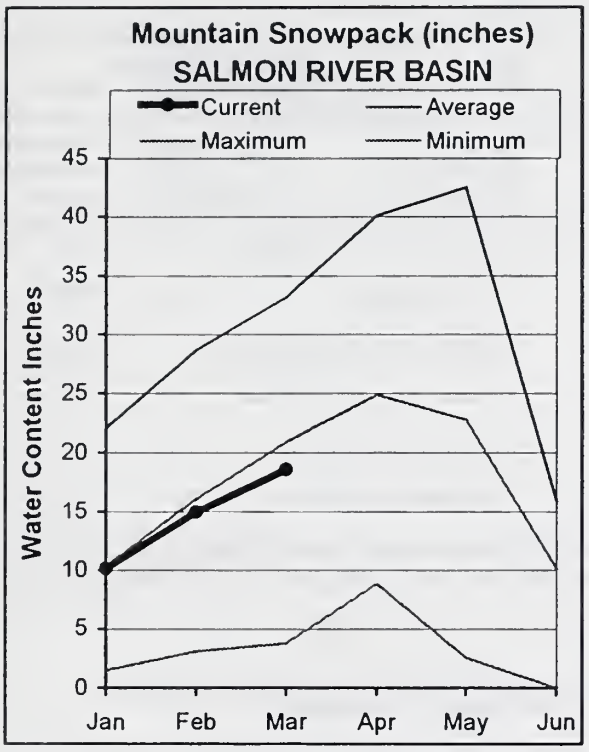
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

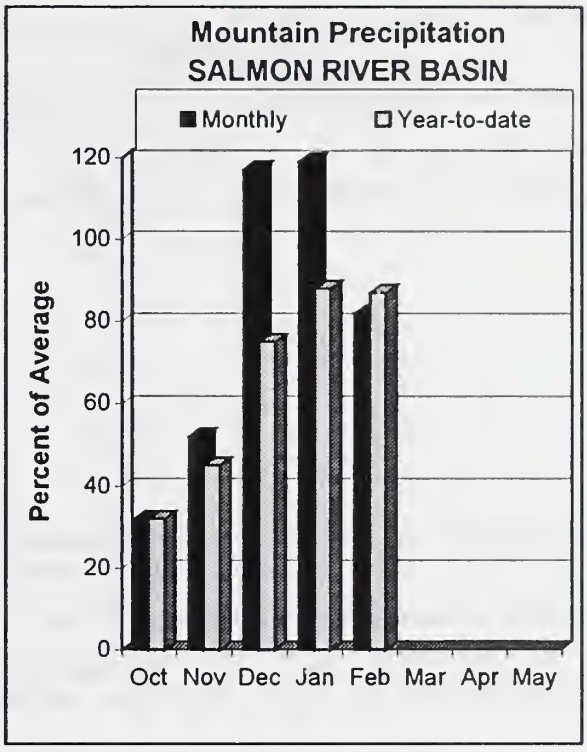
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN
MARCH 1, 2003







WATER SUPPLY OUTLOOK

February precipitation was 82% of average in the Salmon basin. Water year to date precipitation is 87% of average. Snowpack percentages in the Salmon are consistent across the basin ranging from 84% of average in the Middle Fork Salmon River to 89% in the Lemhi basin. Overall, the Salmon basin snowpack is 89% of average, about the same as last year. Streamflow forecasts call for 85% of average for the Salmon River above Salmon and 87% for the Salmon River at White Bird which are similar to last year's summer runoff of 80% of average. Deadwood Summit SNOTEL in the headwaters of the Salmon and Payette basins is tracking the snow water accumulation almost identical to last year and slightly below the 30 year average. The difference between this year and last year is the lack of low elevation snow. Hopefully the rain and low elevation snowmelt in January will make-up the difference in moisture. The below average snowpack and streamflow forecasts should result in lower snowmelt streamflow peaks and a shorter high water season of dangerous flows, allowing river runners to put on the river earlier and actually extend the floating season. The Middle Fork Salmon floaters can expect similar flows as last year with the Banner Summit SNOTEL site almost identical to last year.

SALMON RIVER BASIN

Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	389	625	730	85	835	1070	857
	APR-SEP	510	745	850	85	955	1190	1000
SALMON at White Bird (1)	APR-JUL	3310	4520	5070	87	5620	6830	5851
	APR-SEP	3860	5070	5620	87	6170	7380	6482

SALMON RIVER BASIN

Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN

Watershed Snowpack Analysis - March 1, 2003

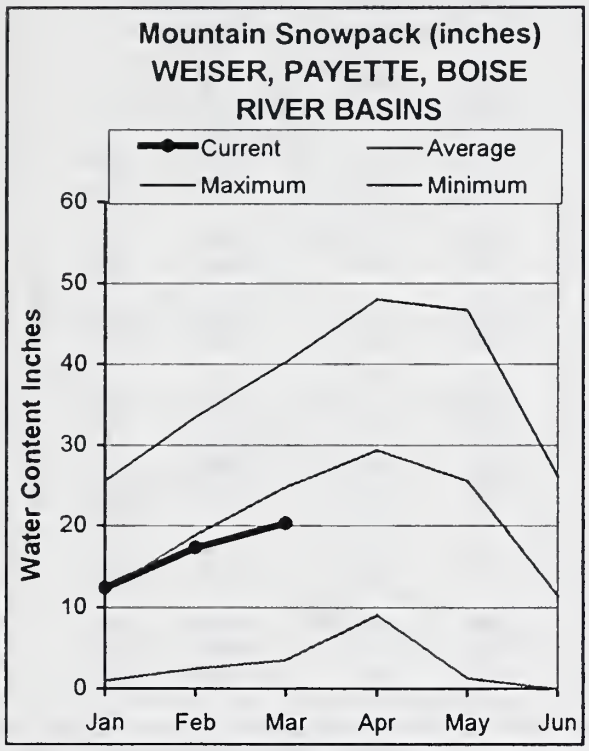
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	11	106	87
Lemhi River	11	118	89
Middle Fork Salmon River	3	102	84
South Fork Salmon River	3	100	87
Little Salmon River	4	91	88
Salmon Basin Total	30	105	89

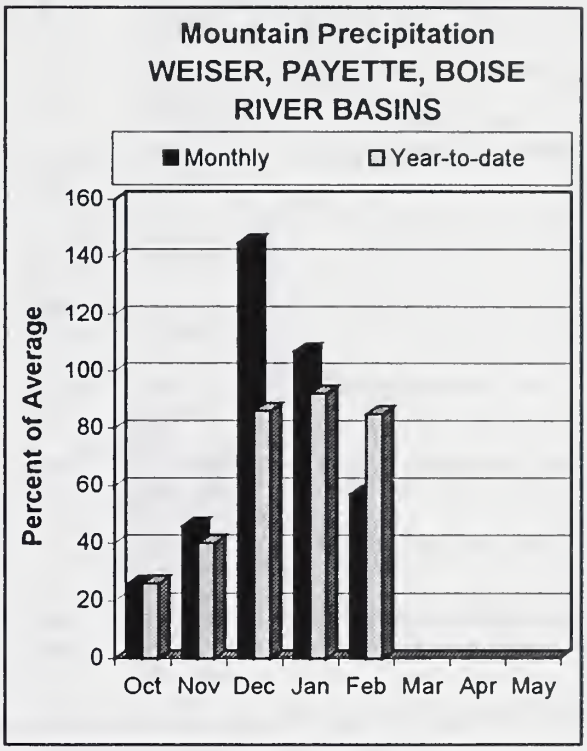
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS MARCH 1, 2003





WATER SUPPLY OUTLOOK

February precipitation was only 57% of average but seasonal temperatures kept the moisture falling as snow in the higher elevations. Water year to date precipitation is 85% of average, less than last year at this time. Snowpack percentages are 77% of average in the Weiser basin, 86% in the North Fork Payette, and 80% in the South Fork Payette basins. In the Boise basin snowpacks are 62% in Mores Creek, 75% in the Middle and North Fork Boise, to 77% in the South Fork Boise basin. Overall, the Boise basin is 71% of average and only 3/4s of last year's March 1 snowpack. Late January and early February precipitation falling as rain helped to erase the soil moisture deficit in these central mountains by soaking though the snowpack and into the dry soils. The Payette reservoir system is 61% of capacity, which is now average for this time of year. The Boise reservoir system increased to 43% of capacity, 73% of average, slightly better than last year. Streamflow runoff greater than 65% of average is needed to provide adequate irrigation in the Boise basin. The 50% Exceedance Forecast for the Boise River near Boise calls for 74% of average indicating agricultural irrigation supplies should be adequate; however, if volumes are lower and near the 70% Exceedance Forecast, supplies will be marginally adequate. The Payette River near Horseshoe Bend is forecast at 81% of average and will provide adequate irrigation and river running volumes. The Weiser River is forecast at 75% of average. A late snowmelt will keep streams higher later in the summer helping the Weiser irrigators who have less storage water to use.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER near Weiser (1)	APR-SEP	122	255	315	75	375	510	420
SF PAYETTE at Lowman	APR-JUL	260	305	335	77	365	410	438
	APR-SEP	295	345	380	77	415	465	494
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	82	104	114	85	124	146	134
	APR-SEP	88	110	120	85	130	152	142
LAKE FORK PAYETTE near McCall	APR-JUL	54	62	68	80	74	82	85
	APR-SEP	56	65	71	80	77	86	89
NF PAYETTE at Cascade (1,2)	APR-JUL	280	375	415	85	455	550	488
	APR-SEP	315	410	450	85	490	585	530
NF PAYETTE nr Banks (2)	APR-JUL	375	465	530	82	595	685	643
	APR-SEP	410	505	575	83	645	740	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	895	1170	1300	81	1430	1710	1610
	APR-SEP	930	1270	1420	81	1570	1910	1755
BOISE near Twin Springs (1)	APR-JUL	345	440	480	76	520	615	636
	APR-SEP	360	470	520	75	570	680	691
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	295	370	405	75	440	515	542
	APR-SEP	260	370	420	73	470	580	579
MORES CREEK near Arrowrock Dam	APR-JUL	31	54	69	53	84	107	131
	APR-SEP	33	56	72	53	88	111	137
BOISE near Boise (1,2)	APR-JUN	660	850	935	74	1020	1210	1258
	APR-JUL	635	920	1050	74	1180	1460	1414
	APR-SEP	715	1000	1130	74	1260	1540	1526

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	5.8	3.0	6.1
CASCADE	693.2	466.3	345.3	438.3
DEADWOOD	164.0	60.7	53.7	88.5
ANDERSON RANCH	450.2	146.4	74.7	268.0
ARROWROCK	272.2	180.6	229.1	210.4
LUCKY PEAK	293.2	107.7	112.9	120.4
LAKE LOWELL (DEER FLAT)	165.2	73.6	38.7	109.1

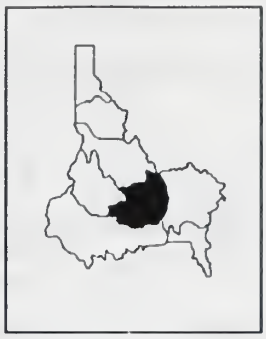
WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - March 1, 2003

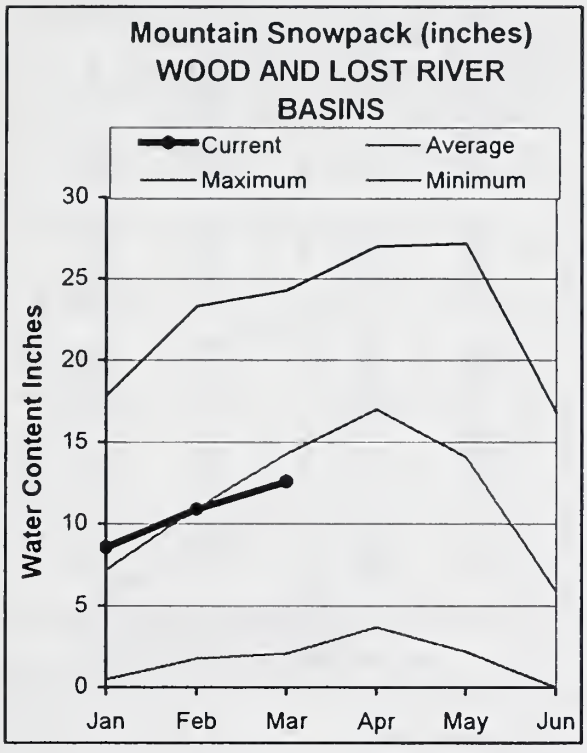
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	2	67	74
Weiser River	5	62	77
North Fork Payette	8	87	86
South Fork Payette	5	91	80
Payette Basin Total	14	88	83
Middle & North Fork Boise	5	83	75
South Fork Boise River	9	81	77
Mores Creek	5	57	62
Boise Basin Total	16	73	71
Canyon Creek	2	41	57

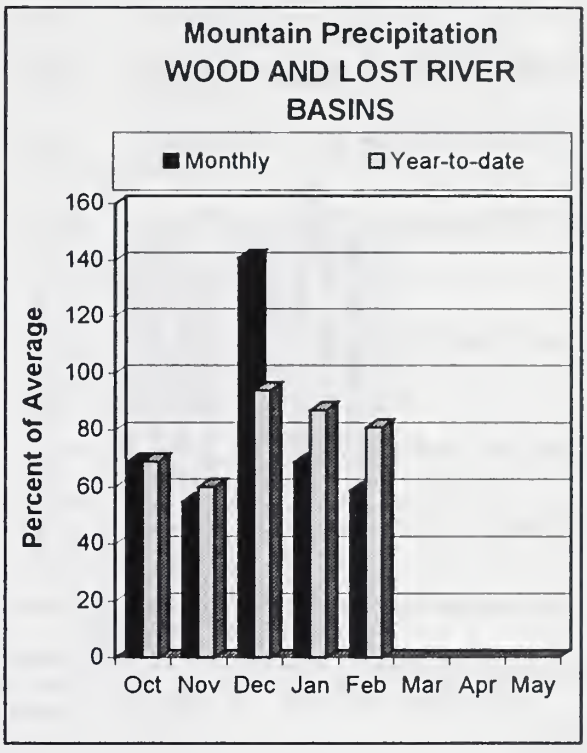
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS
MARCH 1, 2003







WATER SUPPLY OUTLOOK

February precipitation across these central Idaho basins ranged from 30% of average in Camas Creek to above average in the Little Lost basin near the Montana border. Overall, February precipitation was 59% of average. Water year to date precipitation is 81% of average, slightly less than last year. Snowpack percentages range from 74% of average in Camas Creek, Little Lost and Mud Lake area to 90% in the Big Wood, Little Wood and Big Lost basins. Soil moisture deficits still exist under the snowpack as colder temperature kept this winter precipitation falling as snow rather than rain. Magic Reservoir remains nearly empty at only 12% of capacity, 26% of average as a result of the lack of inflow since it was drafted last summer. This is the 16th lowest February 28 storage level since 1917; however, 9 of the 16 lowest levels occurred before 1935. Little Wood and Mackay reservoir are both 41% of capacity and 70% and 60% of average, respectively. Mackay Reservoir is storing 18,400 acre-feet, 9th lowest since 1926, and the lowest February 28 storage since 1938. The 50% Exceedance Forecast for Magic Reservoir inflow calls for 64% of average and 77% for the Big Lost River below Mackay Reservoir indicating agricultural irrigation shortages are likely. However, if volumes are lower and near the 90% or 70% Exceedance Forecasts, irrigation shortages will be more severe. Little Wood irrigators should have just enough irrigation water, even if the 70% Exceedance Forecast occurs. Water users should evaluate their risk level based on all five exceedance streamflow forecasts and consider using the 90% or 70% Exceedance forecast, especially if future precipitation is below normal because forecasts assume normal future precipitation.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	APR-JUL	110	163	190	74	219	292	256
	APR-SEP	126	185	215	74	248	328	289
BIG WOOD near Bellevue	APR-JUL	56	88	115	61	145	195	188
	APR-SEP	63	97	125	62	156	209	201
CAMAS CREEK near Blaine	APR-JUL	19.0	33	45	45	59	82	100
	APR-SEP	20	34	46	46	60	84	101
BIG WOOD below Magic Dam (2)	APR-JUL	62	135	185	64	235	310	291
	APR-SEP	68	144	196	64	248	323	307
LITTLE WOOD near Carey (2)	MAR-JUL	38	58	71	74	84	104	96
	MAR-SEP	42	63	77	74	91	112	104
	APR-JUL	31	51	64	74	77	97	87
	APR-SEP	35	56	70	75	84	105	94
BIG LOST at Howell Ranch	APR-JUN	75	97	112	84	127	149	134
	APR-JUL	87	120	143	83	166	200	172
	APR-SEP	101	139	164	83	188	228	197
BIG LOST below Mackay Reservoir (2)	APR-JUL	56	87	109	77	131	162	142
	APR-SEP	73	109	133	77	157	192	173
LITTLE LOST blw Wet Creek	APR-JUL	13.3	17.9	21	68	24	29	31
	APR-SEP	15.9	22	26	67	30	36	39

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	23.0	18.8	89.7
LITTLE WOOD	30.0	12.4	11.2	17.7
MACKAY	44.4	18.4	22.2	30.8

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - March 1, 2003

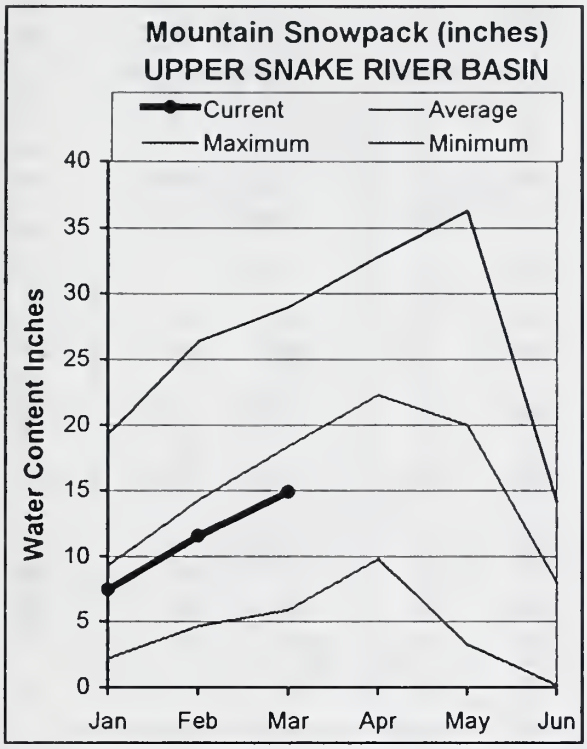
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	107	88
Camas Creek	5	70	74
Big Wood Basin Total	13	94	84
Fish Creek	3	79	76
Little Wood River	9	111	91
Big Lost River	7	115	94
Little Lost River	4	94	76
Birch-Medicine Lodge Cree	4	85	72
Camas-Beaver Creeks	4	80	74

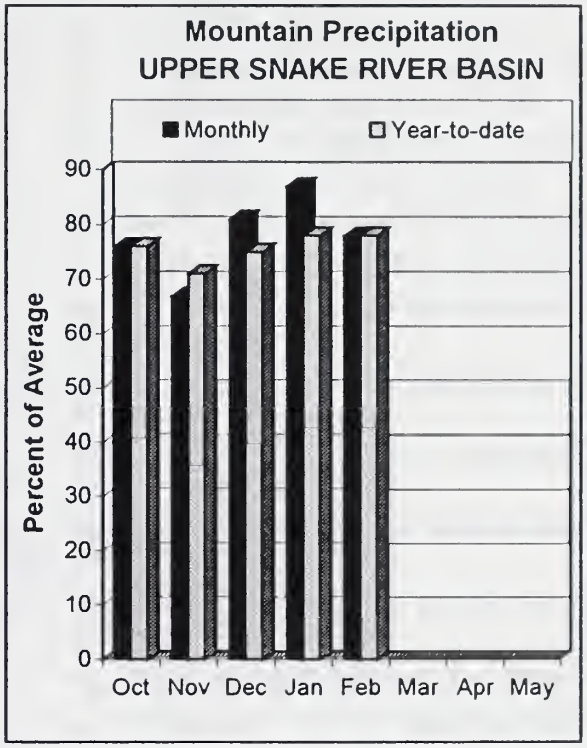
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
MARCH 1, 2003





WATER SUPPLY OUTLOOK

January precipitation across the upper Snake basin was 78% of average, which is also where the water year to date precipitation stands. However, the water year to date precipitation is slightly less than last year at this time. The higher elevation snowpack is slightly better than last year, ranging from 80-85% of average for most basins. The Henry's Fork snowpack is 81% of average and the Snake River above Palisades Reservoir is 84%. The lower elevation snowpack in the Willow, Portneuf and Blackfoot basins are 65-75% of average, slightly less than last year. Overall, the Snake River snowpack above American Falls Reservoir is 80% of average, about the same as a year ago. Combined reservoir storage in Palisades Reservoir and Jackson Lake is 37% of capacity, 54% of average. Overall, the combined reservoir storage for the 8 major reservoirs in the upper Snake is 48% of capacity, 68% of average, and just slightly better than a year ago. The Snake River near Heise is forecast at 75% of average indicating water supplies may be marginally adequate. The Henrys Fork near Rexburg is forecast at 59%. Last year's April 1 snowpack was 80% of average for the Snake River above Palisades but yielded just 65% of average in streamflow. The 50% Exceedance Forecast for April 1 forecast was for 75%. Water users should evaluate their risk level based on all five exceedance streamflow forecasts and consider using a lesser Exceedance Forecast, especially if future precipitation is below normal because the streamflow forecast equations assume normal future precipitation through the runoff season.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	340	390	425	74	460	510	571
	APR-SEP	470	530	570	75	610	670	763
HENRYS FORK near Rexburg (2)	APR-JUL	655	815	925	59	1035	1195	1559
	APR-SEP	885	1070	1190	59	1310	1490	2013
FALLS near Squirrel (1,2)	APR-JUL	225	280	305	79	330	385	386
	APR-SEP	280	335	360	79	385	440	456
TETON near Driggs	APR-JUL	82	107	125	76	143	168	165
	APR-SEP	108	139	160	76	181	214	210
TETON near St. Anthony	APR-JUL	210	265	305	76	345	400	403
	APR-SEP	255	320	365	76	410	475	482
SNAKE near Moran (1,2)	APR-SEP	545	670	725	80	780	905	904
PACIFIC CREEK at Moran	APR-SEP	101	122	136	76	150	171	178
SNAKE above Palisades (2)	APR-JUL	1470	1660	1790	76	1920	2110	2370
	APR-SEP	1700	1910	2060	75	2210	2420	2735
GREYS above Palisades	APR-JUL	184	225	250	74	275	315	338
	APR-SEP	215	260	290	74	320	365	394
SALT near Etna	APR-JUL	139	193	230	67	265	320	342
	APR-SEP	173	235	280	67	325	385	419
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	1860	2300	2500	75	2700	3140	3331
	APR-SEP	2210	2700	2920	75	3140	3630	3875
SNAKE near Heise (2)	APR-JUL	2120	2450	2670	75	2890	3220	3561
	APR-SEP	2490	2860	3110	75	3360	3730	4159
WILLOW CREEK nr Ririe (2)	MAR-JUL	27	40	53	60	70	104	88
BLACKFOOT RESV INFLOW	APR-JUN	26	49	64	53	79	102	120
PORTNEUF at Topaz	MAR-JUL	38	48	55	62	62	72	89
	MAR-SEP	48	60	68	62	76	88	109
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	670	1490	1860	57	2235	3055	3242
	APR-SEP	820	1640	2010	57	2380	3200	3505

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	69.5	55.8	84.4
ISLAND PARK	135.2	84.4	95.4	107.1
GRASSY LAKE	15.2	12.7	9.6	12.0
JACKSON LAKE	847.0	276.3	153.4	494.0
PALISADES	1400.0	553.2	528.0	1033.1
RIRIE	80.5	34.9	30.7	38.5
BLACKFOOT	348.7	66.7	110.9	224.7
AMERICAN FALLS	1672.6	1125.6	1127.1	1271.1

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - March 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	12	94	80
Teton River	8	111	83
Henrys Fork above Rexburg	20	100	81
Snake above Jackson Lake	9	112	85
Gros Ventre River	4	104	81
Hoback River	6	100	76
Greys River	5	107	80
Salt River	5	114	86
Snake above Palisades	31	112	84
Willow Creek	7	89	75
Blackfoot River	5	102	79
Portneuf River	7	79	66
Snake abv American Falls	53	102	80

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.
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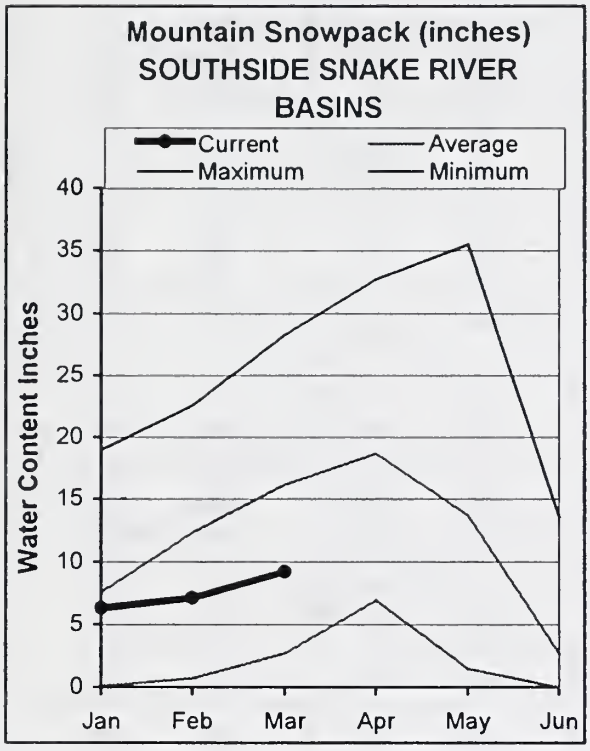
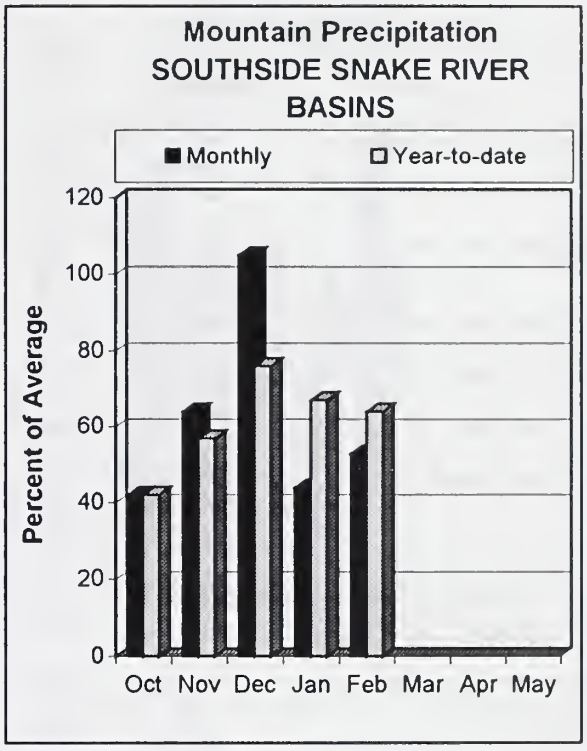
SOUTHSIDE SNAKE RIVER BASINS
MARCH 1, 2003





WATER SUPPLY OUTLOOK

For the 2nd consecutive month, these basins south of the Snake River received the least amount of precipitation in the state. February precipitation was 53% of average. Water year to date precipitation is 64% of average, only about 2/3s of last year's amount. Snowpacks remain some of the lowest in state at 48% of average in the Owyhee, 51% in Salmon Falls, 54% in Oakley, 59% in Bruneau and 60% in the Raft basin. Salmon Falls snowpack is the lowest since 1987 and 6th lowest since 1961. These snowpacks are about half of last year's snowpack except in the Owyhee basin, which has about a 1/3 of last year's snow. Even with the rain and loss of low and mid-elevation snow, Owyhee Reservoir only increased from 20% full a month ago to 25% full; this is a meager 36% of average for February 28. Salmon Falls Reservoir is at 9% of capacity, 27% of average. This is the 21st lowest February 28 storage since 1922; however, of these 21 lowest levels, all occurred before 1955 except 1967, 1961 and last year. As a result of the below average precipitation, streamflow forecasts decreased significantly from a month ago. Salmon Falls Creek and Oakley Reservoir inflow are forecast at 37% of average; Bruneau River at 49%, and Owyhee River at Rome at only 29%. The Owyhee River peaked at 2,800 cfs on February 1 from the rain and low snowmelt. The remaining snow in the Owyhee basin may not provide enough moisture to exceed this previous peak unless more rain or snow occur. Water supply shortages are expected for the Salmon Falls and Oakley basins and possibly the Owyhee water users. The Salmon Falls Surface Water Supply Index indicates this year's water supplies will be worse than last year and similar to 2001. The Oakley index shows supplies will be worse than 2002 and 2001 based on the 50% Exceedance forecast.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	MAR-JUL	6.4	9.8	12.5	37	15.6	21	34
	MAR-SEP	7.1	10.7	13.6	37	16.8	22	37
OAKLEY RESV STORAGE	MAR-31	15.6	16.8	17.6	49	18.4	19.2	36
	APR-30	15.9	18.0	20	49	22	24	41
	MAY-31	10.9	15.2	18.1	40	21	25	45
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	18.0	26	33	37	40	53	89
	MAR-JUL	17.9	27	34	37	42	55	93
	MAR-SEP	19.3	29	36	37	44	58	98
SALMON FALLS RESV STORAGE	MAR-31	12.8	17.1	20	28	23	27	70
	APR-30	15.9	22	26	29	30	36	89
	MAY-31	18.0	27	34	34	41	50	101
BRUNEAU near Hot Spring	MAR-JUL	65	94	117	49	142	184	237
	MAR-SEP	68	98	122	49	148	191	248
OWYHEE near Gold Creek (2)	MAR-JUL	4.6	8.0	10.5	31	14.8	21	34
OWYHEE nr Owyhee (2)	APR-JUL	12.0	19.1	24	29	41	65	82
OWYHEE near Rome	MAR-JUL	92	136	170	29	208	272	580
OWYHEE RESV INFLOW (2)	MAR-JUL	123	172	210	34	252	321	613
	MAR-SEP	132	181	220	34	262	331	643
	APR-SEP	62	107	145	34	188	263	428
SUCCOR CK nr Jordan Valley	MAR-JUL	2.5	4.6	6.0	36	10.0	15.8	16.9
SNAKE RIVER at King Hill (1,2)	APR-JUL	730	1452	1780	59	2110	2830	3045
SNAKE RIVER near Murphy (1,2)	APR-JUL	685	1459	1810	59	2160	2930	3092
SNAKE RIVER at Weiser (1,2)	APR-JUL	367	2019	2770	48	3520	5170	5765
SNAKE RIVER at Hells Canyon Dam (1,2	APR-JUL	705	2386	3150	49	3915	5600	6493
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	7430	12429	14700	68	16970	21970	21550

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	74.5	15.2	14.0	31.4
SALMON FALLS	182.6	16.1	14.6	59.8
WILDHORSE RESERVOIR	71.5	20.5	22.0	40.1
OWYHEE	715.0	176.3	166.2	489.1
BROWNLEE		NO REPORT		

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - March 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	6	55	60
Goose-Trapper Creeks	7	49	54
Salmon Falls Creek	8	49	51
Bruneau River	8	55	59
Owyhee Basin Total	20	37	48

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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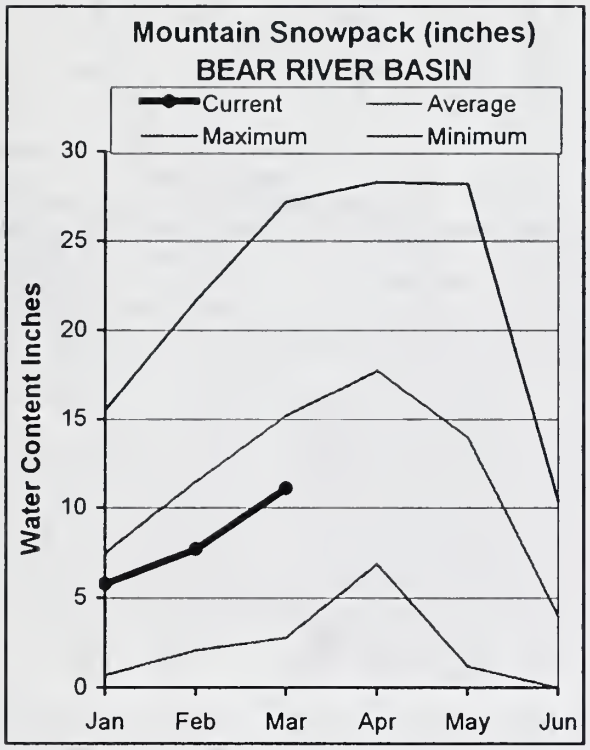
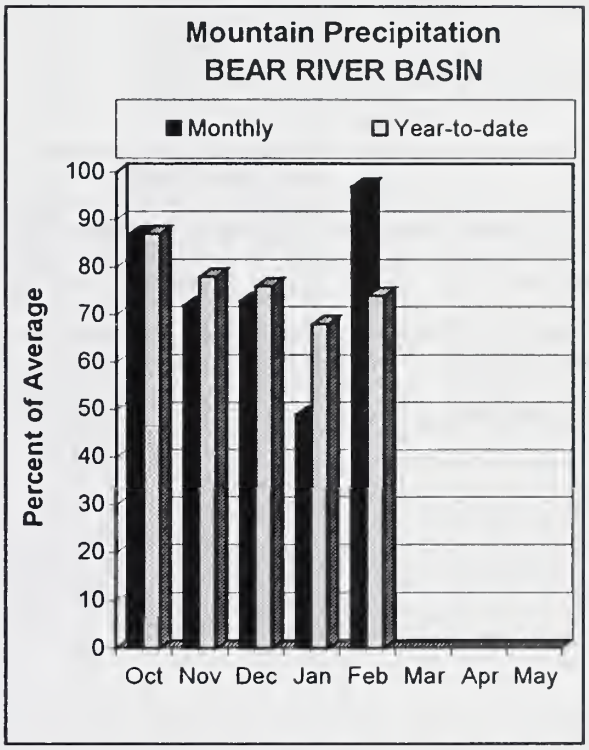
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN
MARCH 1, 2003





WATER SUPPLY OUTLOOK

February precipitation was 97% of average in the Bear River basin, best in the state, but much more is needed in this dry basin. Water year to date precipitation is 74% of average, slightly less than last year at this time. Snowpack percentages range from 70% of average for the Bear River as a whole to 79% in the Smith, Thomas and Montpelier basins. This snow is less than 2002, but more than in 2001. Both of these years, the resulting unregulated streamflow was about 10% of average for the Bear River near Stewart Dam. Trial Lake SNOTEL site in the headwaters of the Bear River at 9,960 feet in Utah has only 10 inches of snow water, average is 20 inches. Last year, it had 13 inches. Bear Lake is 26% of capacity, 41% of average. This is the 5th lowest February 28 storage level since 1922; only 1935, 1936, 1943, and 1993 had less in storage than this year. The Bear River streamflow forecasts remain low and call for only 33% of average for the Bear River below Stewart Dam. The Smiths River is forecast at 58% of average. With the accumulative drought effects -- dry soils, meadows, springs, wetlands, etc. – water supplies don't look very promising in this basin. Water users should be prepared for -- and expect -- very low runoff volumes for the third year, especially if spring and summer precipitation are below average.

BEAR RIVER BASIN
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear R nr UT-WY State Line	APR-SEP	58	70	79	63	89	107	125
Woodruff Narrows Res inflow	APR-SEP	27	43	56	39	70	95	142
Smiths Fork nr Border	APR-JUL	42	52	60	58	69	86	103
	APR-SEP	51	62	71	60	81	99	118
Bear River blw Stewart Dam	APR-JUL	62	82	96	33	138	198	288
	APR-SEP	72	96	113	35	160	230	327

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	372.7	593.1	910.7
MONTPELIER CREEK		NO REPORT		

BEAR RIVER BASIN
Watershed Snowpack Analysis - March 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	107	79
Bear River ab WY-ID line	14	96	70
Montpelier Creek	2	110	79
Mink Creek	4	89	69
Cub River	3	89	73
Bear River ab ID-UT line	25	94	71
Malad River	3	91	70

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised 12/2000).

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)

BOUNDARY CREEK NEAR PORTHILL, ID – No Corrections

MOYIE RIVER AT EASTPORT, ID – No Corrections

SMITH CREEK NEAR PORTHILL, ID – No Corrections

CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)

PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)
+ PRIEST LAKE (STORAGE CHANGE)

PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)

COEUR D'ALENE R AT ENAVILLE, ID - No Corrections

ST. JOE R AT CALDER, ID - No Corrections

SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID

LOCHSA RIVER NR LOWELL - No Corrections

SELWAY RIVER NR LOWELL - No Corrections

CLEARWATER R AT OROFINO, ID - No Corrections

CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections

SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections

SF PAYETTE R AT LOWMAN, ID - No Corrections

DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)

LAKE FORK PAYETTE RIVER NR MCCALL, ID – No Corrections

NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)

NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)

PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)

BOISE R NR TWIN SPRINGS, ID - No Corrections

SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)

BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections

BIG WOOD R NR BELLEVUE, ID - No Corrections

CAMAS CREEK NEAR BLAINE – No Corrections

BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)

LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)

BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections

BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)

LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)

HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)

FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)

TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections

TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE

SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)

PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

BLACKFOOT RESVERVOIR INFLOW, ID
+ BLACKFOOT RIVER
+ BLACKFOOT RESERVOIR (STORAGE CHANGE
SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ SNAKE RIVER AT NEELEY
+ ALL CORRECTIONS MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR – No Corrections
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL
MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1,000 acre-feet, KAF)
Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. (Revised January 2002)

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	46.70	646.50	--	693.2	INACTIVE+ACTIVE
DEADWOOD	--	--	164.00	--	164.0	ACTIVE
ANDERSON RANCH	24.90	37.00	413.10	--	450.1	INACTIVE+ACTIVE
ARROWROCK	--	--	272.20	--	272.2	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	7.90	5.80	159.40	--	165.2	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	74.5	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

ntroduction

ach month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all treamflovw forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water sers need to know what the different forecasts represent if they are to use the information correctly when making perational decisions. The following is an explanation of each of the forecasts.

ost Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume at can be produced given current conditions and based on the outcome of similar past situations, There is a 50 percent hance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow olume will be less than this forecast value.

he most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the recast equation itself. This does not mean that users should not use the most probable forecast; it means that they need evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast alue.

o Decrease the Chance of Having Too Little Water

users want to make sure there is enough water available for their operations, they might determine that a 50 percent hance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk f not having enough water available during the forecast period, users can base their operational decisions on one of the recasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.
There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.
There is a 10 percent chance the streamflow volume will be less than this forecast value.

o Decrease the Chance of Having Too Much Water

users want to make sure they don't have too much water, they might determine that a 50 percent chance of the treamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March I and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are **available** from the **National** Weather Service every two weeks), or if **they are** operating **at a level** where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A **Field** *Office Guide* **for** *Interpreting Streamflow Forecasts" or visit our Web page.*

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